

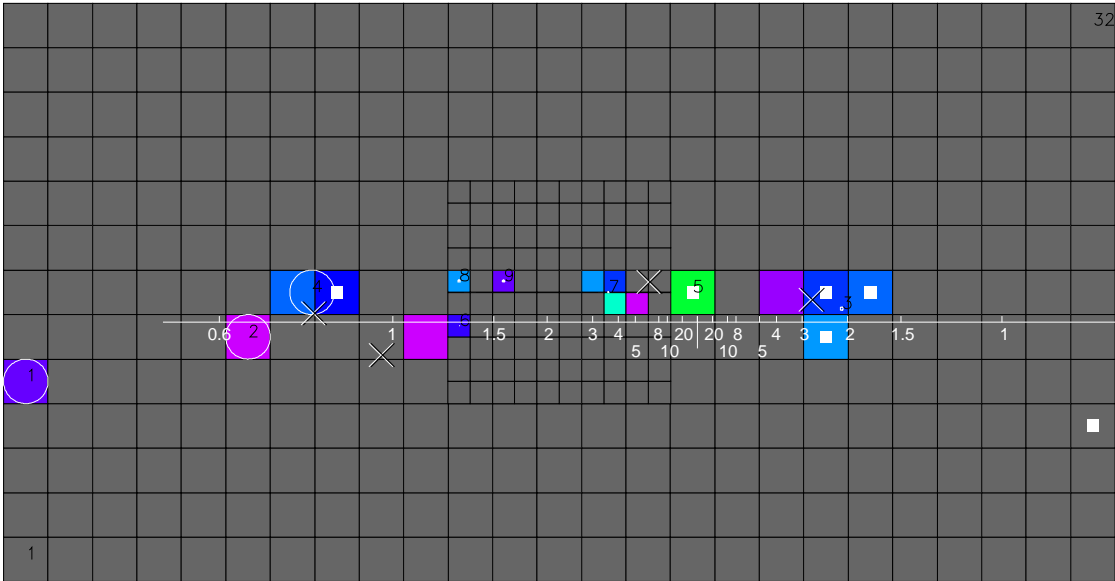
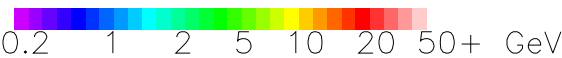
Ecal: A Very Simple Method the Response to e^\pm

Sample: Pick events from Period 4, no muons, in Station 3 or 4, and with $E_{cal} > 20$ GeV.

Method: Assume cluster(s) of peak energy registers the trajectory of initial e^\pm . Use calibrated "momentum scale" to measure momentum of clusters along same y as peak. Then compare to energy in cluster.

An Example

E872 Run= 3236 Event= 23780



Cluster ΣE 14

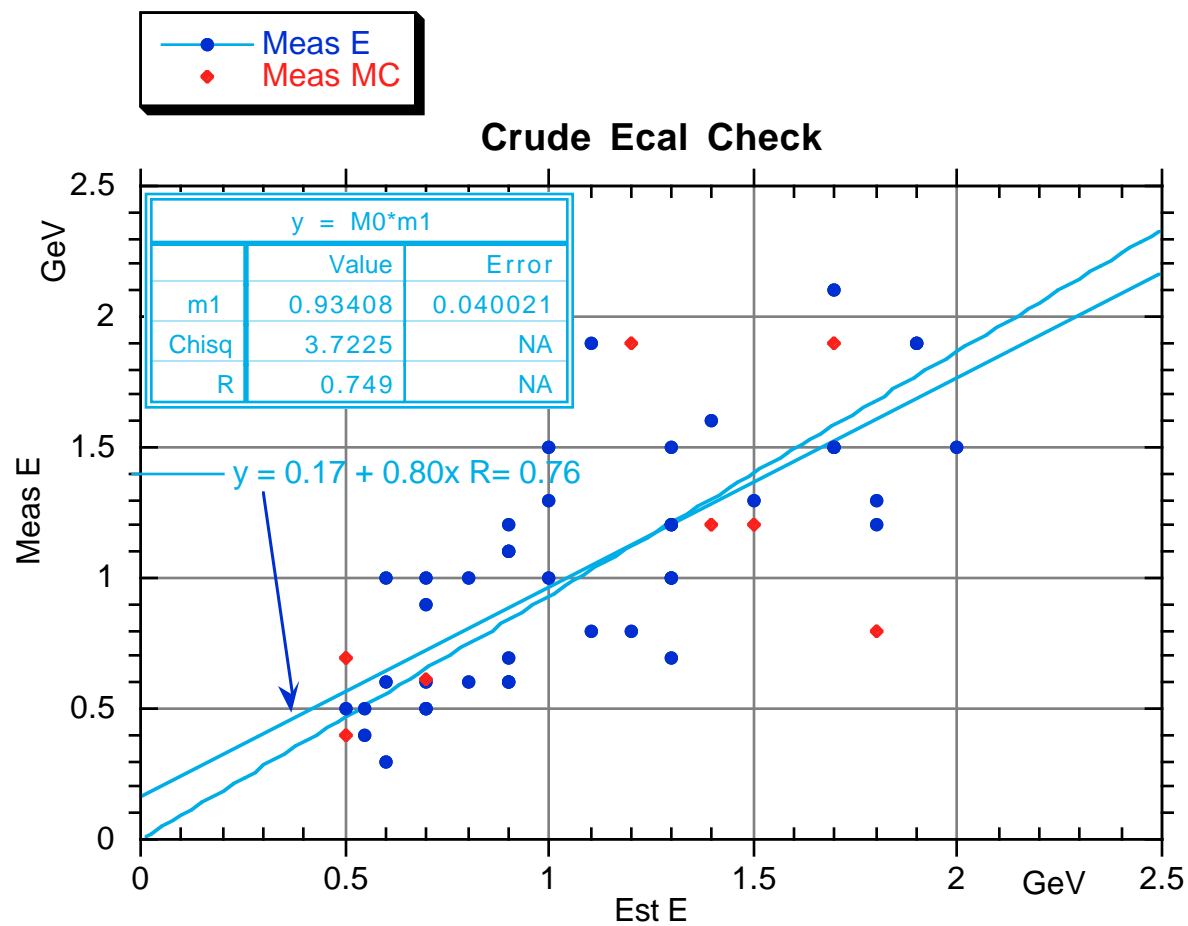
1	0.3
2	0.2
3	2.1
4	1.1
5	2.8
6	0.4
7	2.8
8	0.8
9	0.3

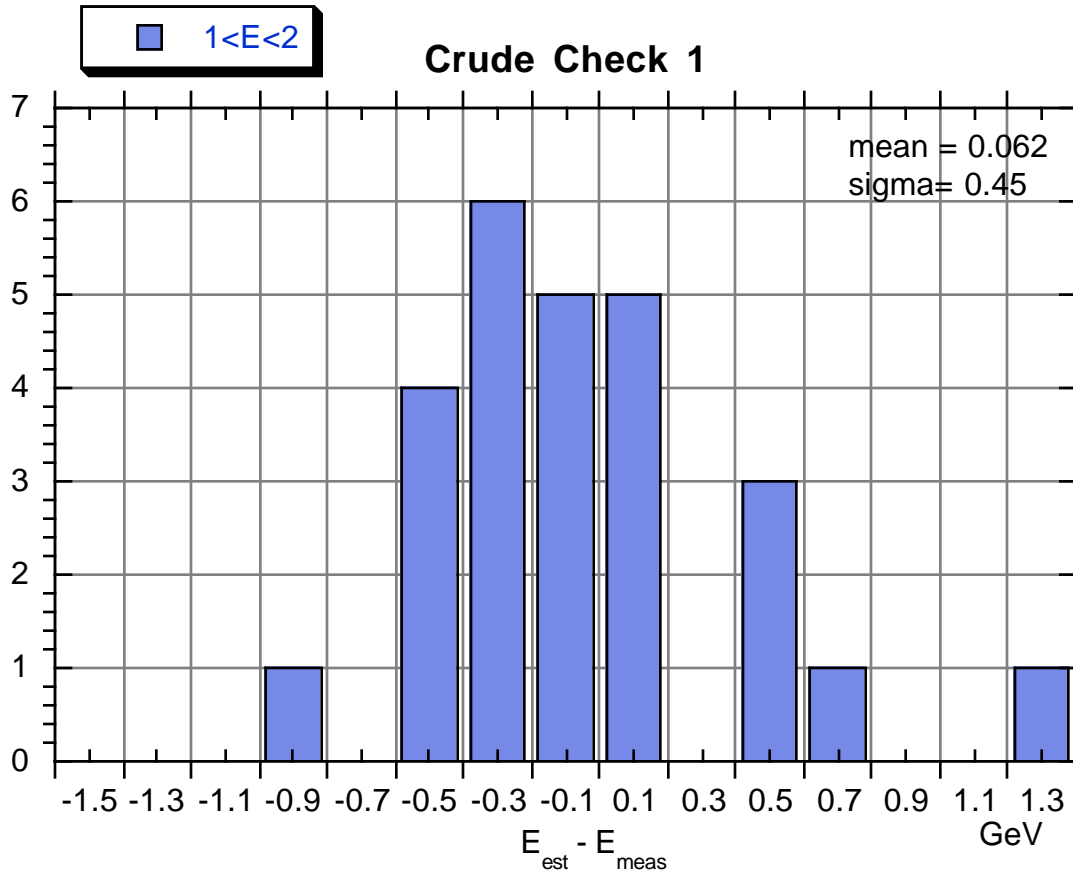
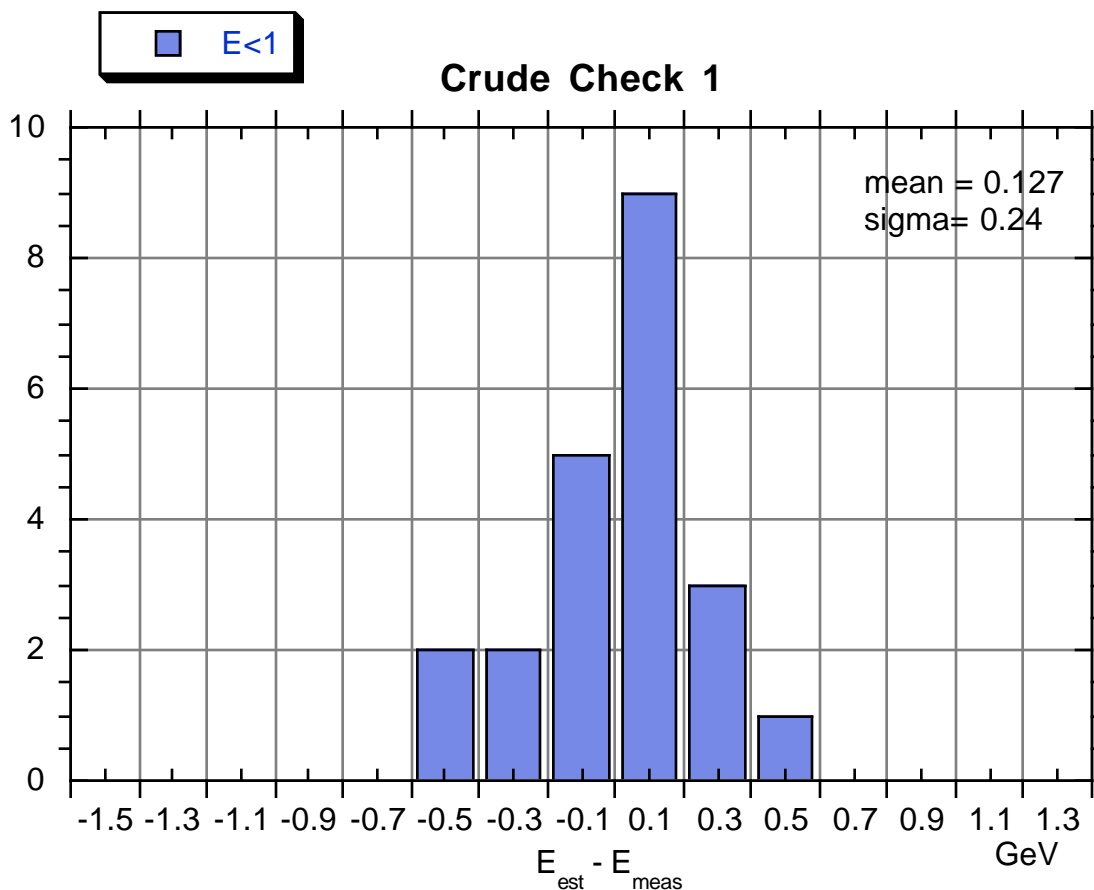
Estimated E

Measured E

2.7
0.8

2.1
1.1





Conclusion: The overall energy response of the calorimeter is probably correct to better than 20%, further data can probably get the uncertainty to 10%.

Of course, this does indicate whether all individual blocks are well-calibrated.

It is probably sufficient to see that all *types* of blocks have a reasonable ($\pm 10\%$) energy response.

$E_0(\text{GeV})$	E_{cal}	fraction	$\langle X / X_0 \rangle$
50.0	36.1 ± 4.7	0.72 ± 0.09	2.27
50.0	25.5 ± 6.5	0.51 ± 0.12	4.77
50.0	$14.1 \pm 6.$	0.28 ± 0.14	7.31
50.0	$6.1 \pm 4.$	0.12 ± 0.09	9.9

The *GEANT* thresholds for E_e and E_γ are important for recording energy in the calorimeter.

It is most sensitive to E_e . The following settings are recommended:

$$E_\gamma \leq 0.020 \text{ GeV}$$

$$E_e \leq 0.050 \text{ GeV}$$

These may not be appropriate for trigger studies!